CompuScope 14105

Comm Analyzer for communications design and test

Digitizer module conceived and designed for critical communications and RF signal capture and analysis.

FEATURES

- 105 MS/s sampling on 2 synchronous channels
- 14 bits nominal resolution, 12 ENOB
- 180 kHz to 230 MHz bandwidth
- Full-size, single-slot PCI card
- Up to 512 MegaSamples of on-board acquisition memory per channel
- Transformer-coupled AC inputs, 50 Ohm impedance
- 32 bits, 66 MHz PCI standard for 200 MB/s transfer to PC memory
- Compatible with GageScope software; application development kits available for LabVIEW, MATLAB, C/C++

APPLICATIONS

I&Q measurements

Wireless device design verification

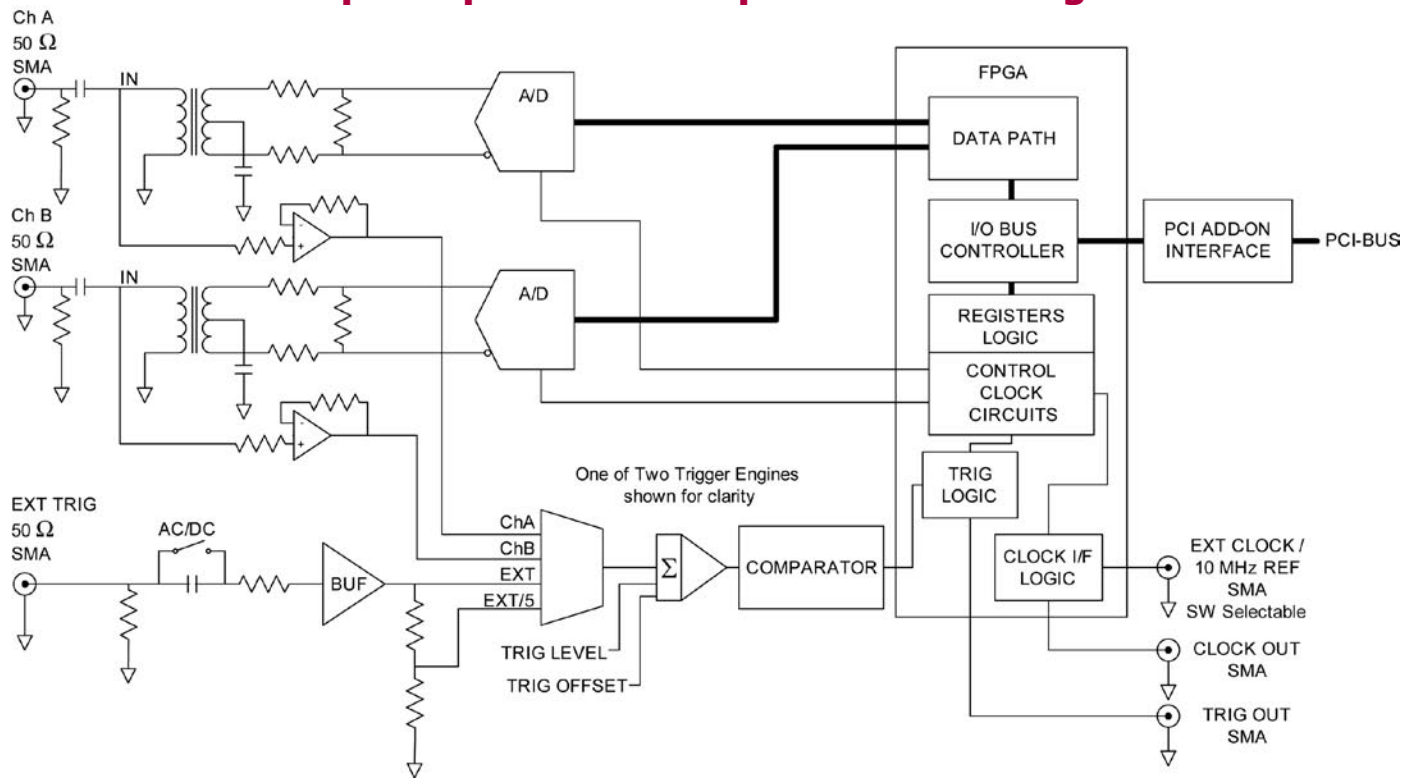
Communications equipment production test

RF ATE systems

Radar system design and test

Lidar systems

CompuScope 14105 Simplified Block Diagram



A/D SAMPLING

Number of Inputs:	2
Resolution:	14 bits
ENOB:	11.48 bits
SNR:	70.9 dB (input frequency 9.85 MHz)
SFDR:	86.9 dB (input frequency 9.85 MHz)
SINAD:	70.7 dB (input frequency 9.85 MHz)
Sampling Rates, Channels A and B simultaneously, or A or B only:	105 MS/s, 100 MS/s, 50 MS/s, 25 MS/s, 10 MS/s, 5 MS/s, 2 MS/s, 1 MS/s, 500 kS/s, 200 kS/s, 100 kS/s, 50 kS/s
Connector:	SMA
Impedance:	50 Ω
Insertion loss:	0.8 dB @ 10 MHz 1.0 dB @ 200 MHz
Coupling:	Transformer-coupled
Bandwidth (see Note 1):	180 kHz to 230 MHz
Flatness (see Note 1):	Within 1 dB of ideal response to > 100 MHz
Typical Accuracy:	No missing codes - Guaranteed
Offset Error:	+1.2 mV
Gain Error:	0 % of Full Scale
DNL:	± 0.5 LSB
INL:	± 1.5 LSB
Input Voltage Range:	0.5 V RMS
Absolute Maximum Amplitude:	±5 Volts (continuous)

TRIGGERING

Trigger Engines:	2 per system
Source:	Ch. A, Ch. B, EXT, or Software; software-selectable
Input Combination:	1, 2, 1 or 2
Type:	Analog triggering
Trigger Level Accuracy:	±5% of full scale
Slope:	Positive or Negative, software-selectable
Sensitivity:	±10% of full scale This implies that signal amplitude must be at least 20% of full scale to cause a trigger to occur. Smaller signals are rejected as noise.
Post Trigger Data:	128 (256) points minimum. Can be defined with a 64 (128) point resolution in dual (single) channel mode.
Maximum Record Length:	Maximum memory

ACQUISITION MEMORY

Data Storage:	In on-board memory
Memory Depth per channel:	8M, 64M, 512M (14 bit samples)
One-Channel Mode (Channel A or B only):	Up to full on-board memory

INTERNAL CLOCK

Source:	clock oscillator
Accuracy:	±25 ppm (0 to 70° C)

EXTERNAL TRIGGER

Impedance:	50 Ω
Amplitude:	Absolute Maximum ±15 V
Voltage Ranges:	±1 V, ±5 V (software-selectable)
Bandwidth:	200 MHz
Coupling:	AC or DC
Connector:	SMA

TRIGGER OUT

Impedance:	50 Ω
Amplitude:	0-2.5 V (TTL)
Connector:	SMA

EXTERNAL CLOCK

Maximum Frequency:	105 MHz
Minimum Frequency:	30 MHz
Signal Level:	Minimum 1 V RMS Maximum 2 V RMS
Impedance:	50 Ω
Sampling Edge:	Rising
Duty Cycle:	50% ± 5%
Connector:	SMA

EXTERNAL REFERENCE

The External Reference timebase is used to synchronize the Internal Sampling Clock.

Frequency:	10 MHz; software-selectable
Signal Level:	Minimum 1 V RMS Maximum 2 V RMS
Impedance:	50 Ω
Sampling Edge:	Rising
Duty Cycle:	50% ± 5%
Connector:	SMA

CLOCK OUT

Maximum Frequency:	105 MHz
Minimum Frequency:	30 MHz (from External Clock); 50 kHz (from Internal Clock)
Output Frequency:	Equal to the sample rate
Signal Level:	0-2.5 V (TTL)
Impedance:	50 Ω
Duty Cycle:	50% ± 5%
Connector:	SMA

MULTIPLE RECORD

Pre-trigger Data:	Up to virtually full record length
Record Length:	128 points minimum (can be defined with a 64 points resolution)
Maximum # Trigger:	8,388,608

TIMESTAMPING

Resolution:	7.2 ns
Counter turnover:	24 hours continuous

BOARD SIZE

Single-slot, full-length PCI

SYSTEM REQUIREMENTS

PCI-based computer, minimum Pentium II 500 MHz, with at least one free full-length PCI slot, 128 MB RAM, 100 MB hard disk.

COOLING SYSTEM

Power Down:	Software-controlled

POWER (WATTS)

+5 V		
	Worst	Typical
All Memory Depths	24.8	23.0
-5V		
	Worst	Typical
All Memory Depths	0.0	0.0
+12 V		
	Worst	Typical
All Memory Depths	1.7	1.5
-12 V		
	Worst	Typical
All Memory Depths	0.6	0.5

PCI BUS INTERFACE

Plug-&-Play:	Fully supported
Bus Mastering:	Fully supported
Scatter-Gather:	Supported in Driver
Bus Width:	32 bits
Bus Speed:	66 MHz or 33 MHz
Bus Throughput:	200 MB/s to PC Memory (66 MHz PCI; dependent on motherboard and number of PCI-PCI bridges)
Compatibility:	PCI-compliant v.2.2 systems. Also v.2.1 systems that supply 3.3 V to PCI slot.

OPERATING SYSTEMS

Windows XP:	All Versions
Windows 2000:	SP1 or higher

SOFTWARE SUPPORT

Software Development Kit for C/C++
Includes sample programs in Visual C
Software Development Kits for LabVIEW, MATLAB

Software for programming-free operation:	GageScope

WARRANTY

One year parts and labor
All specifications subject to change without notice.

MATERIALS SUPPLIED

One CompuScope 14105 card
One Gage Software Disk
One Hardware Manual
Materials provided with each order: GageScope Lite Edition

WARRANTY

One year parts and labor
All specifications subject to change without notice.

Notes to specifications:

1) Detailed characterization curves pending and will be available upon request.

ORDERING INFORMATION

Hardware & Upgrades

CompuScope 14105-16M	143-001-002
CompuScope 14100-128M	143-001-004
CompuScope 14105-1G	143-001-006
CS14105 Memory Upgrade Charge	143-181-200

GageScope Software

GageScope: Lite Edition	included
GageScope: Standard Edition (with Purchase of CompuScope Hardware)	300-100-351
GageScope: Professional Edition (with Purchase of CompuScope Hardware)	300-100-354

Software Development Kits (SDKs)

Gage SDK Pack on CD	200-113-000
CompuScope SDK for C/C++	200-200-101
CompuScope SDK for MATLAB	200-200-102
CompuScope SDK for LabVIEW	200-200-103

All Upgrades performed at the factory.

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